

WHAT IS CLAIMED IS:

- Sub A' →
1. A desiccant package useable for protecting highly moisture-sensitive electronic devices sealed within an enclosure, comprising:
 - a) a moisture-permeable container which can be positioned in the sealed enclosure;
 - b) solid water absorbing particles of one or more materials disposed in the moisture-permeable container;
 - c) said solid water absorbing particles including solid particles of one or more materials, at least one of such materials having an average particle size range 0.001 to 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower than a humidity level to which the device is sensitive within the sealed enclosure; and
 - d) said moisture-permeable container essentially maintains the moisture absorption rate of the solid water absorbing particles contained therein, the moisture-permeable container acting to separate the solid water absorbing particles from the highly moisture-sensitive device.
 2. The desiccant package in accordance with claim 1 wherein one or more of the materials of the solid water absorbing particles are selected from the group consisting of alkaline metal oxides, alkaline earth metal oxides, sulfates, metal halides, perchlorates and metals with work functions less than 4.5 eV and capable of being oxidized in the presence of moisture, or combinations thereof.
 3. The desiccant package in accordance with claim 1 which provides a humidity level less than 2500 ppm.
 4. The desiccant package in accordance with claim 1 which provides a humidity level less than 100 ppm.

項目	単位	数値	単位	数値
1. 総人口	人	1,234,567	2. 男性人口	612,345
3. 女性人口	人	622,222	4. 0歳人口	15,678
5. 1歳人口	人	16,789	6. 2歳人口	17,890
7. 3歳人口	人	18,901	8. 4歳人口	19,012
9. 5歳人口	人	20,123	10. 6歳人口	21,234
11. 7歳人口	人	22,345	12. 8歳人口	23,456
13. 9歳人口	人	24,567	14. 10歳人口	25,678
15. 11歳人口	人	26,789	16. 12歳人口	27,890
17. 13歳人口	人	28,901	18. 14歳人口	29,012
19. 15歳人口	人	30,123	20. 16歳人口	31,234
21. 17歳人口	人	32,345	22. 18歳人口	33,456
23. 19歳人口	人	34,567	24. 20歳人口	35,678
25. 21歳人口	人	36,789	26. 22歳人口	37,890
27. 23歳人口	人	38,901	28. 24歳人口	39,012
29. 25歳人口	人	40,123	30. 26歳人口	41,234
31. 27歳人口	人	42,345	32. 28歳人口	43,456
33. 29歳人口	人	44,567	34. 30歳人口	45,678
35. 31歳人口	人	46,789	36. 32歳人口	47,890
37. 33歳人口	人	48,901	38. 34歳人口	49,012
39. 35歳人口	人	50,123	40. 36歳人口	51,234
41. 37歳人口	人	52,345	42. 38歳人口	53,456
43. 39歳人口	人	54,567	44. 40歳人口	55,678
45. 41歳人口	人	56,789	46. 42歳人口	57,890
47. 43歳人口	人	58,901	48. 44歳人口	59,012
49. 45歳人口	人	60,123	50. 46歳人口	61,234
51. 47歳人口	人	62,345	52. 48歳人口	63,456
53. 49歳人口	人	64,567	54. 50歳人口	65,678
55. 51歳人口	人	66,789	56. 52歳人口	67,890
57. 53歳人口	人	68,901	58. 54歳人口	69,012
59. 55歳人口	人	70,123	60. 56歳人口	71,234
61. 57歳人口	人	72,345	62. 58歳人口	73,456
63. 59歳人口	人	74,567	64. 60歳人口	75,678
65. 61歳人口	人	76,789	66. 62歳人口	77,890
67. 63歳人口	人	78,901	68. 64歳人口	79,012
69. 65歳人口	人	80,123	70. 66歳人口	81,234
71. 67歳人口	人	82,345	72. 68歳人口	83,456
73. 69歳人口	人	84,567	74. 70歳人口	85,678
75. 71歳人口	人	86,789	76. 72歳人口	87,890
77. 73歳人口	人	88,901	78. 74歳人口	89,012
79. 75歳人口	人	90,123	80. 76歳人口	91,234
81. 77歳人口	人	92,345	82. 78歳人口	93,456
83. 79歳人口	人	94,567	84. 80歳人口	95,678
85. 81歳人口	人	96,789	86. 82歳人口	97,890
87. 83歳人口	人	98,901	88. 84歳人口	99,012
89. 85歳人口	人	100,123	90. 86歳人口	101,234
91. 87歳人口	人	102,345	92. 88歳人口	103,456
93. 89歳人口	人	104,567	94. 90歳人口	105,678
95. 91歳人口	人	106,789	96. 92歳人口	107,890
97. 93歳人口	人	108,901	98. 94歳人口	109,012
99. 95歳人口	人	110,123	100. 96歳人口	111,234
101. 97歳人口	人	112,345	102. 98歳人口	113,456
103. 99歳人口	人	114,567	104. 100歳人口	115,678
105. 101歳人口	人	116,789	106. 102歳人口	117,890
107. 103歳人口	人	118,901	108. 104歳人口	119,012
109. 105歳人口	人	120,123	110. 106歳人口	121,234
111. 107歳人口	人	122,345	112. 108歳人口	123,456
113. 109歳人口	人	124,567	114. 110歳人口	125,678
115. 111歳人口	人	126,789	116. 112歳人口	127,890
117. 113歳人口	人	128,901	118. 114歳人口	129,012
119. 115歳人口	人	130,123	120. 116歳人口	131,234
121. 117歳人口	人	132,345	122. 118歳人口	133,456
123. 119歳人口	人	134,567	124. 120歳人口	135,678
125. 121歳人口	人	136,789	126. 122歳人口	137,890
127. 123歳人口	人	138,901	128. 124歳人口	139,012
129. 125歳人口	人	140,123	130. 126歳人口	141,234
131. 127歳人口	人	142,345	132. 128歳人口	143,456

6. The desiccant package in accordance with claim 5 wherein one or more of the materials of the solid water absorbing particles are selected from the group consisting of alkaline metal oxides, alkaline earth metal oxides, sulfates, metal halides, perchlorates and metals with work functions less than 4.5 eV and capable of being oxidized in the presence of moisture, or combinations thereof.

7. The desiccant package in accordance with claim 5 wherein the binder is selected from the group consisting of cellulose acetates, epoxies, phenoxies, siloxanes, methacrylates, sulfones, phthalates, and amides or combinations thereof.

8. The desiccant package in accordance with claim 5 wherein the solid water absorbing particles comprise 10 wt% to 90 wt% of the solid water absorbing particles and the binder.

9. The desiccant package in accordance with claim 5 which provides a humidity level less than 2500 ppm.

10. The desiccant package in accordance with claim 5 which provides a humidity level less than 100 ppm.

11. The desiccant package in accordance with claim 5 wherein water vapor transmission rate of the binder is greater than 3.5 gm-mil/100 in²/day.

12. The desiccant package in accordance with claim 5 wherein the binder is radiation curable.

13. The desiccant package in accordance with claim 5 wherein the binder is radiation-curable photoresist compositions.

14. The desiccant package in accordance with claim 5 wherein the binder is selected from the group consisting of acrylates, methacrylates, cyclized polyisoprenes, polyvinyl cinnamates, epoxies, silicones, and adhesives or combinations thereof.

Sub A 3
15. A desiccant useable for protecting highly moisture-sensitive electronic devices sealed within an enclosure, comprising:

- a) solid water absorbing particles of one or more materials in a moisture-permeable binder on a support;
- b) said solid water absorbing particles including solid particles of one or more materials, at least one of such materials having an average particle size range 0.001 to 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower than a humidity level to which the device is sensitive within the sealed enclosure; and

c) said binder being adapted to reduce degradation of or enhance the moisture absorption rate of the solid water absorbing particles contained therein, the binder being in solid or liquid phase or dissolved in a liquid.

16. The desiccant in accordance with claim 15 wherein one or more of the materials of the solid water absorbing particles are selected from the group consisting of alkaline metal oxides, alkaline earth metal oxides, sulfates, metal halides, perchlorates and metals with work functions less than 4.5 eV and capable of being oxidized in the presence of moisture, or combinations thereof.

17. The desiccant in accordance with claim 15 wherein the binder is selected from the group consisting of cellulose acetates, epoxies, phenoxies, siloxanes, methacrylates, sulfones, phthalates, and amides or combinations thereof.

18. The desiccant in accordance with claim 15 wherein the solid water absorbing particles comprise 10 wt% to 90 wt% of the solid water absorbing particles and the binder.

19. The desiccant in accordance with claim 15 which provides a humidity level less than 2500 ppm.

20. The desiccant in accordance with claim 15 which provides a humidity level less than 100 ppm.

21. The desiccant in accordance with claim 15 wherein water vapor transmission rate of the binder is greater than 3.5 gm-mil/100 in²/day.

22. The desiccant in accordance with claim 15 wherein the binder is radiation curable.

23. The desiccant in accordance with claim 15 wherein the binder is radiation-curable photoresist compositions.

24. The desiccant in accordance with claim 15 wherein the binder is selected from the group consisting of acrylates, methacrylates, cyclized polyisoprenes, polyvinyl cinnamates, epoxies, silicones, and adhesives or combinations thereof.

Sub A A → 25. A desiccant, comprising material including at least in part solid particles of one or more materials, at least one of such materials having an average particle size range 0.001 to 0.1 micrometers to provide a high rate of water absorption and to provide an equilibrium minimum humidity level lower than a humidity level to which a highly moisture sensitive electronic device is sensitive within a sealed enclosure.

26. The desiccant of claim 25 wherein the material includes a binder adapted to reduce degradation of or enhance the moisture absorption rate of the solid water absorbing particles contained therein, the binder being in solid or liquid phase or dissolved in a liquid.

27. The desiccant of claim 25 wherein one or more of the materials of the solid water absorbing particles are selected from the group consisting of alkaline metal oxides, alkaline earth metal oxides, sulfates, metal halides, perchlorates and metals with work functions less than 4.5 eV and capable of being oxidized in the presence of moisture, or combinations thereof.

28. The desiccant in accordance with claim 26 wherein the binder is selected from the group consisting of cellulose acetates, epoxies,

phenoxies, siloxanes, methacrylates, sulfones, phthalates, and amides or combinations thereof.

29. The desiccant in accordance with claim 26 wherein the solid water absorbing particles comprise 10 wt% to 90 wt% of the solid water absorbing particles and the binder.

30. The desiccant in accordance with claim 25 which provides a humidity level less than 2500 ppm.

31. The desiccant in accordance with claim 25 which provides a humidity level less than 100 ppm.

32. The desiccant in accordance with claim 26 wherein water vapor transmission rate of the binder is greater than 3.5 gm-mil/100 in²/day.

33. The desiccant in accordance with claim 26 wherein the binder is radiation curable.

34. The desiccant in accordance with claim 26 wherein the binder is radiation-curable photoresist compositions.

35. The desiccant in accordance with claim 26 wherein the binder is selected from the group consisting of acrylates, methacrylates, cyclized polyisoprenes, polyvinyl cinnamates, epoxies, silicones, and adhesives or combinations thereof.